DEPARTMENT OF HEALTH & HUMAN SERVICES

Site: MEDley
Break: 3.11
Other:

Public Health Service
Agency for Toxic Substances
and Disease Registry

Memorandum

Date: December 18, 1991

From: ATSDR Senior Regional Representative

Subject: Medley Farms NPL site;
Gaffney, South Carolina

To: Jan Rogers, Chief
SC/NC Unit
North Superfund Remedial Branch
U.S. EPA Waste Management Division

Attached are two copies of the Initial Release Health Assessment for the referenced site as prepared by the South Carolina Department of Health and Environmental Control under a cooperative agreement with the ATSDR.

Please have your project manager review the document for any major technical, factual errors, or omissions. Penciled corrections are acceptable. Please try to return the document or written comments to me by January 4, 1992 so that we can proceed with putting the document out for public comment and review. Should there be any questions, I can be reached at ext. 1586. Thanks for your continued support and interest.

Chuck Pietrosewicz

Chuck Pietrosewicz, R.H.S.P.

cc: file; OAA/ORO; M. Howie/ATSDR-DHAC/RIMB

Health Assessment for

MEDLEY FARMS

GAFFNEY, CHEROKEE COUNTY, SOUTH CAROLINA

CERCLIS NO. SCD980558142

NOVEMBER 12, 1991

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
Agency for Toxic Substances and Disease Registry

Comments Period Ends:

THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104 (i) (7) (A) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, states "...the term 'health assessment' shall include preliminary assessments of potential risks to human health posed by individual sites and facilities, based on such factors as the nature and extent of contamination, the existence of potential pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified hazardous substances and any available recommended exposure or tolerance limits for such hazardous substances, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The Administrator of ATSDR shall use appropriate data, risks assessments, risk evaluations and studies available from the Administrator of EPA."

INITIAL RELEASE

HEALTH ASSESSMENT

MEDLEY FARMS

GAFFNEY, CHEROKEE COUNTY, SOUTH CAROLINA

CERCLIS NO. SCD980558142

Prepared by

South Carolina Department of Health and Environmental Control

Under Cooperative Agreement with the

Agency For Toxic Substances and Disease Registry

SUMMARY

The Medley Farms site is a National Priorities List (NPL) facility located near the town of Gaffney, South Carolina. This 7-acre site was used by several industrial firms from 1966 to 1976 to dispose of a variety of chemicals in drums and in unlined lagoons. The Environmental Protection Agency (EPA) conducted an emergency clean-up of the site in 1983. This involved the removal of approximately 5,300 chemical drums and containers (many of which were leaking), 70,000 gallons of contaminated water from 6 on-site lagoons (which were backfilled after they were drained), and an undetermined amount of surface soil. The site was added to the Environmental Protection Agency's (EPA) NPL in March 1989, after being proposed for inclusion in June 1986.

After the 1983 site clean-up, four residents of the community expressed concern about possible contamination of their drinking water and the possible health effects that could result from its use. Residents have voiced no new health concerns since 1983. Municipal water has been made available to the residents (Figure 3); however, we do not know whether concerned parties are utilizing this source.

Environmental contamination appears to be confined to the site. Although the site is unrestricted, access is limited through the owner's driveway. Thus, exposures to the general public are unlikely.

The site is classified as being an indeterminate public health hazard because of insufficient ground-water and soil data. If additional data should become available, this classification may change.

The site remediation is being addressed in two stages:

- ✓ immediate actions and long-term remedial actions focusing on a cleanup of the entire site.

- ✓ Contaminants identified as posing a health threat or health hazard on the Medley site include: benzene, chlorinated aliphatic compounds (CACs), and 1,2,4-Trichlorobenzene.

We recommend that the environmental fate and transport of site-related ground-water contaminants be fully characterized; that local drinking water wells be sampled; that all possible sources of contamination in the area unrelated to the site be identified; and that on-site and off-site surface soil sampling from the top three inches of soil be conducted.

BACKGROUND

A. Site Description and History

The Medley site is a 7-acre section of the Medley Farm which occupies 61.9 acres of rural land. The site is located on Burnt Gin Road (County Road 72), approximately 5 miles south of Gaffney, South Carolina (Figure 1). The Medley site is situated on top of a small hill. The site is covered with weeds, briars, and small scrub trees. The remainder of the Medley property is hilly and consists of dense forests and pasture land. The land surrounding the site slopes off steeply to the east and south. The site topography features are presented on Figure 2. The site is unrestricted, with limited vehicular access through the property owner's driveway.

Topography maps show that surface drainage occurs to the northeast and east, to the southeast, and to the south and southwest into tributaries of Jones Creek (Figure 2). These drainage areas are fed by smaller, intermittent ravines and ditches surrounding the site. Surface drainage from the Medley Farm property eventually discharges to Jones Creek. Water level measurements indicate that ground-water flow is primarily to the southeast towards Jones Creek. Jones Creek and its tributaries serve as zones of ground-water discharge from the site (RI/FS, December 1990).

Several industrial firms disposed of a variety of chemicals in drums and in unlined lagoons on the site from 1966 to 1976. The former drum disposal sites and lagoons are presented in Figure 4.

The South Carolina Department of Health and Environmental Control (SCDHEC) first became aware of the Medley site in 1981 when a firm, complying with Superfund's waste disposal notification clauses, reported its use of Medley Farms for the disposal of its hazardous wastes to the Environmental Protection Agency (EPA). In May 1983, an anonymous caller informed SCDHEC that barrels were being disposed of on the site.

When SCDHEC visited the site, approximately 5,300 55-gallon drums and 15-gallon containers, as well as six unlined lagoons were found. Some of the drums and containers were empty; however, many contained chemical residues and several were rusted and leaking. The six on-site lagoons contained approximately 70,000 gallons of water mixed with an unknown quantity of waste materials.

At SCDHEC's request, EPA conducted an emergency clean-up of the site from June to July 1983. They removed drums and containers from the site and treated and removed 70,000 gallons of lagoon wastes. The lagoons were drained and backfilled. An undetermined amount of contaminated surface soil was removed from the site. All waste materials were transported to an authorized hazardous waste disposal facility.

EPA analyses indicated that contaminants removed from the site included alcohols, acids, bases, industrial solvents, insoluble organic compounds such as polyesters and resins, and small quantities of polychlorinated biphenyls (PCBs).

In January 1988, EPA and five potentially responsible parties (PRPs) signed an Administrative Consent Order requiring the PRPs to conduct a Remedial Investigation / Feasibility Study (RI/FS); the Remedial Investigation was finalized in February 1991.

EPA proposed Medley for inclusion to the NPL in June 1986 and added it (to the NPL) in March 1989. Under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), SCDHEC conducted a preliminary Health Assessment of the site in 1988. A RI/FS, which evaluates the risks associated with a site and evaluates the various options for site remediation, was finalized in 1991. This Health Assessment will further characterize the public health impact from this site using the data generated by the RI/FS.

B. Site Visit

SCDHEC staff, consisting of Edward Gregory, Doug Blansit, Yanqing Mo, and Angela Gorman, conducted a site visit in June 1988. We noted an open field covered with briars, weeds, and scrub trees. The property is surrounded by forest to the north, east, and south. Municipal water service is available along the length of Burnt Gin Road (Figure 3).

Prior surface soil clean-up activities appear to have removed any obvious signs of contamination, although we noted small discolored areas on the surface soil during our site visit. On the south side of the site, there was a purple-colored patch of surface soil (substance unknown) approximately 3 feet in diameter. We also noted small patches of a resin-like dust scattered throughout the site.

There was no evidence of trespassers even though the site is not restricted. However, the site does not appear to be readily accessible to the public since it is adjacent to the property owner's house and bordered by forest on the other three sides.

C. Demographics, Land Use, and Natural Resource Use

1. Demographics

At the time of the 1980 Census, an estimated 3,300 persons lived within a 4-mile radius of the site. Approximately 300 people lived within 1 mile. The property owners live approximately 100 feet west of the site.

The city of Gaffney, with a 1980 population of 13,453, is located 5 miles to the north. There are a few new homes in the Medley area but no signs

of large-scale population growth were noted. Preliminary 1990 Census figures for Cherokee County vary little from the 1980 Census.

The population located within a 4-mile radius was 87% white and 12% black (state percentages in 1980 were 68.8% and 30.4%, respectively). About 18% of the population were under age 10 while 8% were age 65 years or older (state percentages were 15.8% and 9.2%); the median age of 28.2 was approximately the same as the state median.

The area within the 4-mile radius is predominantly rural except for a small section on the outskirts of Gaffney. Residential housing consists almost entirely of single-family units. About 31% of owner-occupied housing units in the area were worth less than $25,000 in 1980 (state median was $35,100), while some 84% of renter-occupied units were under $150 per month (state median was $130 per month). These figures are indicative of lower-to-middle income households.

2. Land Use

Land use in the vicinity of the site is primarily agricultural and light residential. SCDHEC staff conducted a drive-through visit of the area surrounding the site to determine local land-use patterns. We saw no factories or industrial facilities within a 4-mile radius of the site. A few service stations and convenience stores were seen. Two elementary schools are both located approximately 2 miles from the site, one to the north and one to the west. Many homes have gardens and some livestock, but there was little evidence of commercial agricultural activity. We saw people fishing in Thicketty creek, approximately 1.5 mile from the site (see Figure 1). We also found empty shotgun shells indicating that hunting occurred near the site.

3. Natural Resource Use

Residents in the vicinity of the Medley Farms site use ground water for drinking and other domestic purposes. There are six private residential drinking water wells located within a 1-mile radius of Medley Farms; these are wells 1, 2, 3,4, 5, and 6 (Figure 3). Figure 3 also presents the approximate locations of the municipal water supply lines in this area.

Jones Creek is located approximately 500 to 1000 feet downgradient of the former disposal area. It is not large enough to sustain fishing and is the only source of perennial surface water within the proximity of the site.

D. State and Local Health Data

No health outcome data for the Medley Farms site is available for review as of August 1991. We contacted the Cherokee County Health Department, the Environmental Quality Control District Office, and the Appalachia III District

Office for information on health outcome data relevant to the site area. These offices had no record of any health-related concerns from the public or adverse health events attributed to the site.

COMMUNITY HEALTH CONCERNS

After the 1983 site clean up, four local residents with private drinking wells contacted SCDHEC. They were concerned about possible contamination of their water supplies and the health effects to their families that could occur from this contamination. SCDHEC responded by sampling these wells in 1984; the results will be discussed further in Environmental Contamination Section. While municipal water supply lines are accessible, no information is available as to its current use by local residents.

ENVIRONMENTAL CONTAMINATION AND OTHER HAZARDS

Data in this section are from the February 1991 Final Remedial Investigation Report. This represents the latest information for this site. However, these data have not been through the standard review process. Any changes in these data will necessarily lead toward a reassessment of both this section and the Public Health Implications.

The contaminants of concern are listed in Table 1. However, their listing does not imply that they are a public health threat. This will be discussed in later sections of this report. These contaminants have been selected for evaluation based on their concentrations found on and off-site and by comparison with the ATSDR health screening values. These screening values have been established based on numerous studies of each contaminant.

Toxic Release Inventory (TRI)

TRI is developed by the U.S. Environmental Protection Agency (EPA) from the chemical release information provided by certain industries. The chemical release information is based on contaminants found in the air, surface water, ground water, or soil. TRI did not contain any information on toxic chemical release in the area around the Medley site.

A. On-site Contamination

A number of soil contaminants have been reported in on-site soil samples at depths ranging from 0-1 foot; however, this does not reflect true surface soil values of the top 3 inches of soil.

1. Ground Water - Monitoring Wells

A total of twenty ground-water monitoring wells were installed on-site, and one ground-water monitoring well was installed off-site during the

RI/FS in 1990 (Figure 2). Three of the on-site wells and one of the off-site well (BW1, BW2, BW3, and BW4) were constructed in the bedrock aquifer (BW). Three additional wells (SW1, SW3, and SW4) were constructed in the saprolite (or shallow) aquifer, screened in soil (SW). One water level piezometer well (PZ1) was constructed for water level measurement only (PZ), Figure 2. Ground-water flow is primarily to the southeast towards Jones Creek. Jones Creek and its tributaries serve as zones for ground-water discharge from the site.

The only contaminants detected in ground water from the RI/FS were volatile organic compounds (VOCs) from the saprolite and bedrock wells. The saprolite (shallow) aquifer generally serves as a porous medium of ground-water flow. The ground water in the bedrock (deep) aquifer at the site is under semi-confined to confined conditions and is not conducive to ground water flow. The saprolite wells have an average thickness of 33 feet, while the bedrock wells have an average thickness of 100 feet. The highest concentrations of VOCs were found directly beneath the source area. No VOCs were detected in samples SW1, BW1-2, BW3-2, BW4-1, and BW4-2 (Figure 2). No plume has been identified to indicate that chemical migration has reached Jones Creek. Table 1 shows the contaminants of concern and their maximum concentrations detected in ground-water monitoring wells.

2. Ground Water - Private Wells

The closest private well is 100 feet west of the Medley site. No sampling data for this well exists to date.

3. Soil

On-site soil contaminants were detected primarily in shallow soil. Soil contaminants appear to be localized to the former disposal areas. The highest contaminant concentrations were detected in samples from the former lagoon areas. Soil borings and test pits were sited during the RI to investigate suspected lagoon and drum disposal areas (Figure 5). The primary contaminants found were chlorinated aliphatic compounds (CACs) and semi-volatile organic compounds (SVOCs). No vertical patterns of contaminant distribution are apparent. Elevated chemical concentrations were generally found in samples collected from depths less than 17 feet. The samples collected do not truly reflect surface samples by ATSDR definition (which specifies soil collected from 0 - 3 inches).

B. Off-site Contamination

1. Ground Water - Private Wells

In June 1983, EPA detected methylene chloride (Figure 3) in four private wells (2, 3, 5, and 6) in levels ranging from 10.9 to 16.2 mcg/L (micrograms per liter). In July 1984, methylene chloride (678 mcg/L) and

1,2-dichloroethane (2.51 mcg/L) were detected in Well 2 which is approximately 125 feet upgradient from the site. No contaminants were detected in wells 3, 5, and 6 at that time. In the 1989-90 sampling, however, a monitoring well located between the site and Well 2 did not reveal the presence of contaminants. Hydrogeologic data indicate that the presence of compounds in Well 2 does not appear related to the Medley site. SCDHEC has advised the owner of this well not to use the well as a source of drinking water. Available data do not indicate if the owner has followed this advice. These private wells have not been sampled since 1984.

2. Surface Water and Sediments

Jones Creek serves as a discharge area of the Medley Farm site. No site contaminants were detected in surface water samples or sediment samples from Jones creek.

C. Quality Assurance and Quality Control

The data in this section are from the February 1991 RI/FS. Thus, this report contains the latest data for this site. Quality Control and Quality Assurance conclusions drawn for this Health Assessment are determined by the validity of the analysis and conclusions made and the availability and reliability of the referenced information. SCDHEC assumes that adequate quality assurance and quality control measures were followed with regard to chain-of-custody, laboratory procedures, and data reporting.

The monitoring wells currently in use at the Medley site appear to be constructed according to SCDHEC standards to allow collection of representative ground water samples.

D. Physical and Other Hazards

We saw some abandoned vehicles and appliances behind the property owner's residence during the 1988 and 1991 site visits, but these were not easily accessible to persons other than the residents. We noted no other hazards.

PATHWAYS ANALYSES

To determine whether the health of nearby residents is being affected by site contaminants, SCDHEC evaluates the environmental pathways and human activities that lead to human exposure. Pathway analyses consist of the following five elements: a source of contamination, transport through an environmental media, a point of exposure, a route of human exposure, and ultimately the exposed population.

SCDHEC identifies exposure pathways as completed, potential, or eliminated. Completed pathways are those that meet the five elements listed above.

Potential pathways indicate that exposure to a contaminant may have occurred, may be occurring, or may occur in the future. A potential pathway exists when one of the above listed five elements is missing, but could exist. An eliminated pathway occurs when at least one of the five elements is missing and will never be present.

There are no completed pathways at the Medley site. The Medley site does have potential exposure pathways and those are discussed in the Environmental Pathways Section.

A. Potential Exposure Pathways

1. Ground Water

Exposure to ground water off-site is not a pathway of concern because the ground-water plume containing site-related chemicals is presently confined to the site and no apparent exposure points exist.

The contaminated area of ground water at the Medley site is not being used as a source of drinking water. Additionally, the contaminant plume does not underlie any residential buildings. Therefore, no point of exposure exists at the present time. Exposures could potentially occur in the future should new residential development in the area lead to the construction of a drinking water well on the site.

Benzene concentrations in ground water ranged up to 95 mcg/L. No evidence indicates that any drinking water wells have been impacted; however, the future use of ground-water cannot be ascertained.

2. Surface Water

Very low levels of several contaminants were found in nearby Jones Creek in 1990. The contaminants did not exceed ATSDR screening values and are not considered to be of concern to the public at this time.

3. Soil

Benzene contaminated soil occurred in test pits, but was not detected in soils from zero to one foot below the surface. No surface soil data exist. Migration of the residual chemicals in soil is insignificant on the site due to the site topography, limited access to the site, dense forests surrounding the site, the vegetative cover of the site, and limited mobility of chemical residuals.

Topographic analyses indicate that surface soil contaminants could enter Jones Creek through runoff during rain storms. However, sampling conducted shows that no site-related contaminants have reached Jones Creek and no point of exposure exists from this medium.

4. Air

No air monitoring data is available for review. Contaminants attached to soil particles could be carried by the wind. However, but dust generation is unlikely because the site is surrounded by forest on three sides and there are few areas of exposed surface soil. In addition, there are no homes other than that of the property owner immediately adjacent to the site. Therefore, no evidence for transport of site-related contaminants through air exists.

5. Food Chain

Any potential exposures to site-related contaminants due to ingestion of blackberries, plums, or wild game found on site is unlikely. The site is covered by clean fill; and plants growing on clean fill should not be able to access any site-related chemicals. The site is also not readily accessible to the general public because of its remote location.

Jones Creek in the area near the site does not appear to be large enough for fishing. Contaminants have not been detected there at levels of concern.

Hunting is popular in the vicinity of the site, but substantial accumulation of contaminants in wildlife is not likely. Wild game do not feed exclusively on the site. Surface clean-up has been thorough and significant surface water contamination has not been detected. Site-related contaminants are unlikely to be transported via this pathway.

B. Human Exposure Pathways

1. Ground Water

Methylene chloride and 1,2-dichloroethane were detected in well 2. Exposures to these compounds could occur to residents who use this water for drinking, bathing, and cooking. The owner was informed of this contamination and advised to discontinue well use. We do not know whether the resident actually discontinued use of this well. The well is located upgradient of the site, so it is unlikely that the contamination is site-related.

2. Soil

Exposure to benzene and VOCs in soil is unlikely. These contaminants were detected in localized areas at depths greater than 1 foot and at 15 to 17 feet respectively. A number of contaminants have been detected in shallow (0-1 foot) soil samples. We do not know the concentration of contaminants actually found within the top 3 inches of soil. Since most of the site is covered with weeds and grasses, with small areas of bare soil, exposures to these contaminants would be unlikely. People most likely to be exposed

include the property owner's family (if they spend time on the site), remedial workers, trespassers, and hunters who may stray onto the property. Possible routes of exposure include dermal contact or incidental ingestion of contaminated soil, and inhalation of contaminants attached to dust particles.

PUBLIC HEALTH IMPLICATIONS

A. Toxicological Implications

Benzene

No exposures to benzene are occurring at the present time. Therefore, no health effects are expected and this compound will not be discussed further.

Chlorinated Aliphatic Compounds (CACs)

This class of chemicals includes methylene chloride, chloroform, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1-dichloroethylene, and trichloroethylene (Table 1).

As these compounds exhibit similar toxicologic and chemical properties, one may assume that a mixture of these compounds is at least as toxic as the effects of each compound. Evidence in laboratory animals indicates that, for some limited combinations of these compounds, the toxicity of the mixture is greater than would be expected from the toxicity of each compound.

The ingestion of small amounts of these compounds over a prolonged period of time may lead to damage of the liver and kidneys. The compounds whose names contain "ethane" appear less likely to produce kidney damage. The EPA classifies several compounds in this class as probable human carcinogens (Group B2). A Group B2 classification is used to characterize a chemical for which there is sufficient evidence of carcinogenicity in animals but inadequate evidence or no data from human epidemiological studies. These include methylene chloride, chloroform, and trichloroethylene. The EPA classifies 1,1,2-trichloroethane as a possible human carcinogen.

If on-site ground water was used as a drinking water source, the amount of each contaminant consumed would exceed ATSDR minimal risk levels. Hypothetically, individuals consuming this water could develop noncarcinogenic health effects (that is, liver, kidney, and possibly nervous system damage).

Since these compounds are mainly probable human carcinogens, individuals who consume this water (by ATSDR standards) are at a risk.

Semi-Volatile Organic Compounds

1,2,4-Trichlorobenzene was found at a concentration of 710 mg/kg (milligrams per kilogram) in samples of the test pits. This concentration however, has been diluted for this analysis. This compound was also found in soil borings of 15-17 feet at a maximum concentration of 12 mg/kg of soil. In addition, 1,2,4-Trichlorobenzene was found in the samples taken from 0-1 feet range at a concentration of 1.2mg/kg. These figures are from the 1990 RI/FS. The screening value used for this compound is 26 mg/kg of soil based on a child ingesting the soil. Since exposures to this compound are unlikely to occur, it is not considered a health threat at this time.

EPA has not classified this chemical as to human carcinogenicity. Available information on this chemical is limited.

B. Health Outcome Data Evaluation

As no health outcome data exists for the Medley site, there is no further discussion at this time.

C. Community Health Concerns Evaluation

The community expressed concern about possible contamination of their water supplies and the health effects that may occur from this contamination. We responded to these concerns by sampling the water supply wells in 1984. The only well that showed contamination is Well 2 located approximately 125 feet upgradient of the site (Figure 3). Monitoring well sampling conducted in 1989 - 1990 of a monitoring well located between the well of concern and the site showed no contaminants. As Well 2 is located upgradient of the site, the site topography indicates, and a monitoring well located between the well and the site showed no contaminants; this well's contamination is not considered related to the site. The owner of Well 2 was advised to discontinue use of the well; however, we do not know whether the owner has taken the advice.

Since the other private wells showed no contaminants of concern, they are not considered to be a health risk at this time.

Municipal water supply lines are now available to the community and no further concerns have been expressed.

CONCLUSIONS AND RECOMMENDATIONS

From the available information, and because points of human exposure have not been verified, we consider the Medley site to be an indeterminate public health hazard. Environmental monitoring data are insufficient to adequately assess past, present, or future human exposure pathways. If additional soil and ground-water data become available, this conclusion may change. Based on the current available information, we make the following recommendations:

1. Conduct additional ground-water monitoring to determine groundwater flow direction and the vertical and horizontal extent of contamination.

2. Identify and sample any private wells which are still in use. Drinking water wells downgradient of the site should be monitored on a regular basis.

3. Attempt to locate other possible off-site contaminant sources in the Medley area.

4. Conduct on-site and off-site surface soil sampling from the top three inches of soil.

PREPARERS OF THE REPORT

Health Evaluation Reviewers: Robert F. Marino, M.D., M.P.H.
Director, SCDHEC Division of
Health Hazard Evaluation

John F. Brown, D.V.M., Ph.D.
SCDHEC, State Toxicologist

Douglas Blansit, Research
Specialist

Demographics Reviewer: Lovyst L. Howell
Data Management & Research Analyst II

Environmental Reviewer: Charles Lewis, MPH
Environmental Quality Manager

ATSDR REGIONAL REPRESENTATIVE

Chuck Pietrosewicz
Regional Operations, Office of the Assistant
Administrator

ATSDR TECHNICAL PROJECT OFFICER

Richard Gillig
Environmental Health Scientist
Division of Health Assessment
and Consultation
Remedial Programs Branch

REFERENCES

1. ATSDR, Toxicological Profile for Benzene, ATSDR/TP-88/03, May 1989.

2. ATSDR, Toxicological Profile for Chloroform, ATSDR/TP-88/09, January 1989.

3. ATSDR, Toxicological Profile for 1,1-Dichloroethylene, ATSDR/TP-89/11, December 1989.

4. ATSDR, Toxicological Profile for 1,1,1-Trichloroethane, ATSDR/TP-90/27, December 1990.

5. ATSDR, Toxicological Profile for 1,1,2-Trichloroethane, ATSDR/TP-89/24, December 1989.

6. ATSDR, Toxicological Profile for Trichloroethylene, ATSDR/TP-88/24, October 1989.

7. Clayton, G. D., and F. E. Clayton (eds.). 1981-82. Patty's Industrial Hygiene and Toxicology, 3rd ed. John Wiley and Sons, New York.

8. Klaasen, C. D., M. O. Amdur, and J. Doull. 1986. Casarett and Doull's Toxicology: The Basic Science of Poisons, 3rd ed. MacMillan Publishing Co., New York.

9. Sirrine Environmental Consultants. 1990. Draft Feasibility Study Report, Medley Farm Site, Gaffney, South Carolina.

10. Sirrine Environmental Consultants. 1990. Draft Remedial Investigation Report, Phase I & II, Medley Farm Site, Gaffney, South Carolina.

11. Sittig, M. 1985. Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd ed. Noyes Publications, Park Ridge, New Jersey.

12. South Carolina Data Center. 1989. South Carolina Statistical Abstract, 1989. South Carolina Division of Research and Statistical Services, Columbia, South Carolina.

13. South Carolina Department of Health and Environmental Control (SCDHEC) files.

TABLE 1

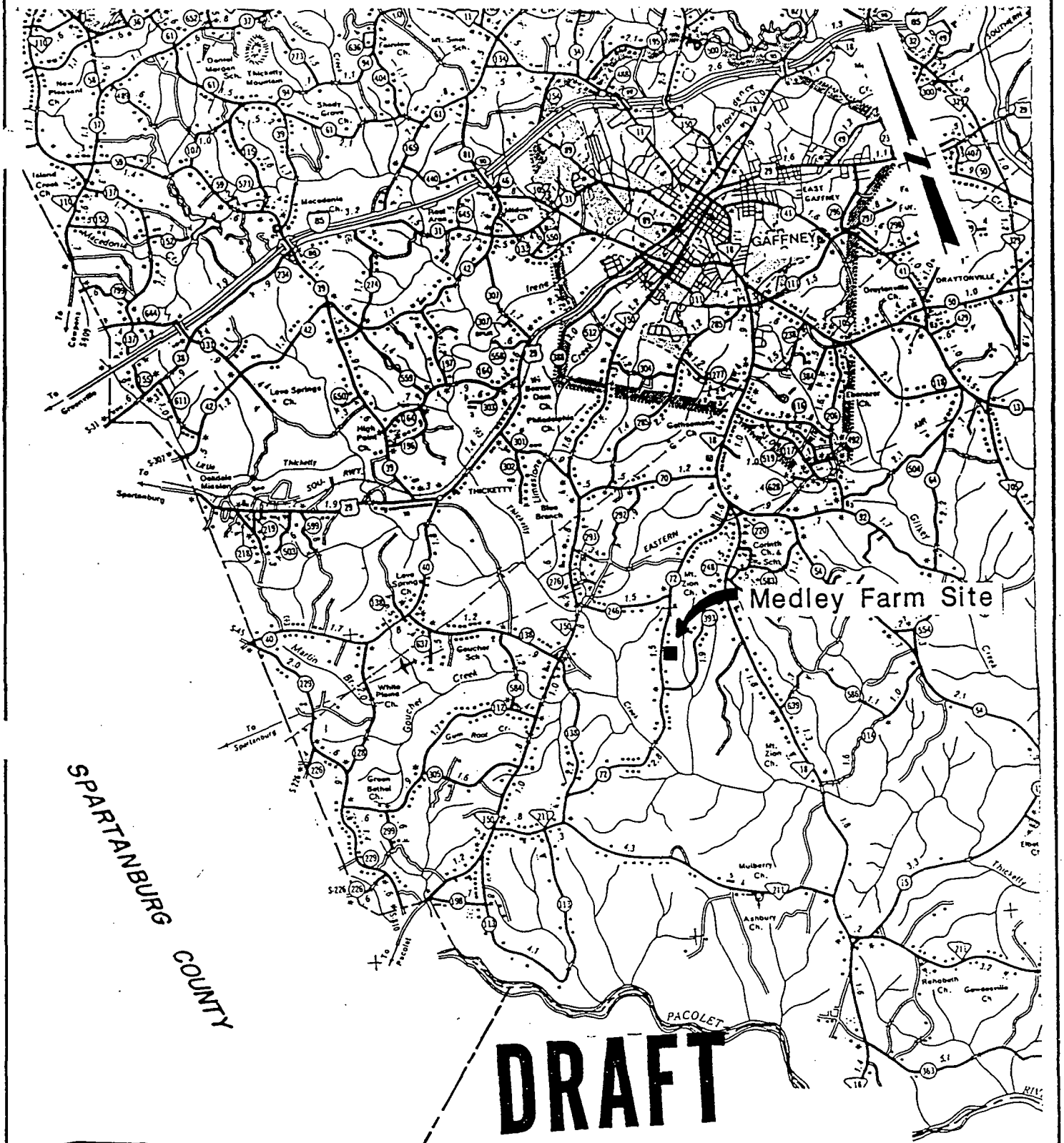
ON-SITE CONTAMINANTS OF CONCERN IN GROUND WATER - MONITORING WELLS

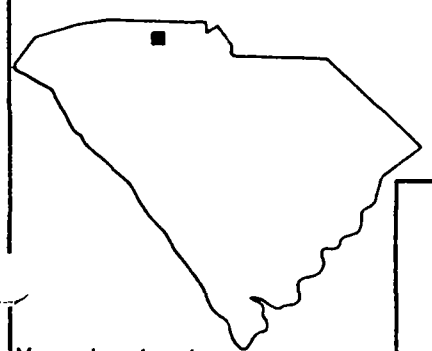
MEDLEY FARM SITE REMEDIAL INVESTIGATION/FEASIBILITY STUDY

	Saprolite Wells Maximum Well Sample (mcg/L)		Bedrock Wells Maximum Well Sample (mcg/L)		Screening Value (ATSDR) (mcg/L)
Methylene Chloride	38 BJ	SW106-4	110 D	BW2-1	0.5
Chloroform	4		19 DJ	BW2-1DL	0.1
1,1,1-Trichloroethane	3300 E	SW4-1	310 D	BW2-1	200
1,1,2-Trichloroethane	13	SW4-1	3 J	BW2-1	3
1,1-Dichloroethylene	3500	SW4-1	440 D	BW2-1	7
Trichloroethylene	190	SW3-3	720 D	BW2-1	* 5
Benzene	0.7		95	BW103-1X	* 5

B - Compound detected in corresponding bank.
D - Sample diluted for this analysis.
E - Estimated value. Analyte concentration exceeded the calibration range. These values are approximate.
J - Estimated value. Analyte concentration below the calibration range. The concentration and identification of the compound are tentative.
* These figures are minimum concentration levels, and serve as guidelines from the Safe Drinking Water Act (SDWA).

The screening values used in this Table are lifetime exposure levels set by the Drinking Water Health Advisories. They are based on a lifetime (70 years) at an exposure rate of 2 Liters of water consumption per day.





Map showing location of site and county in South Carolina.

SIRRINE ENVIRONMENTAL CONSULTANTS
Greenville, South Carolina

Figure 1
Medley Farm Site
Cherokee County.
Gaffney, South Carolina

DUNCAN-PARNELL, INC., CHARLOTTE 366 800-432-6022

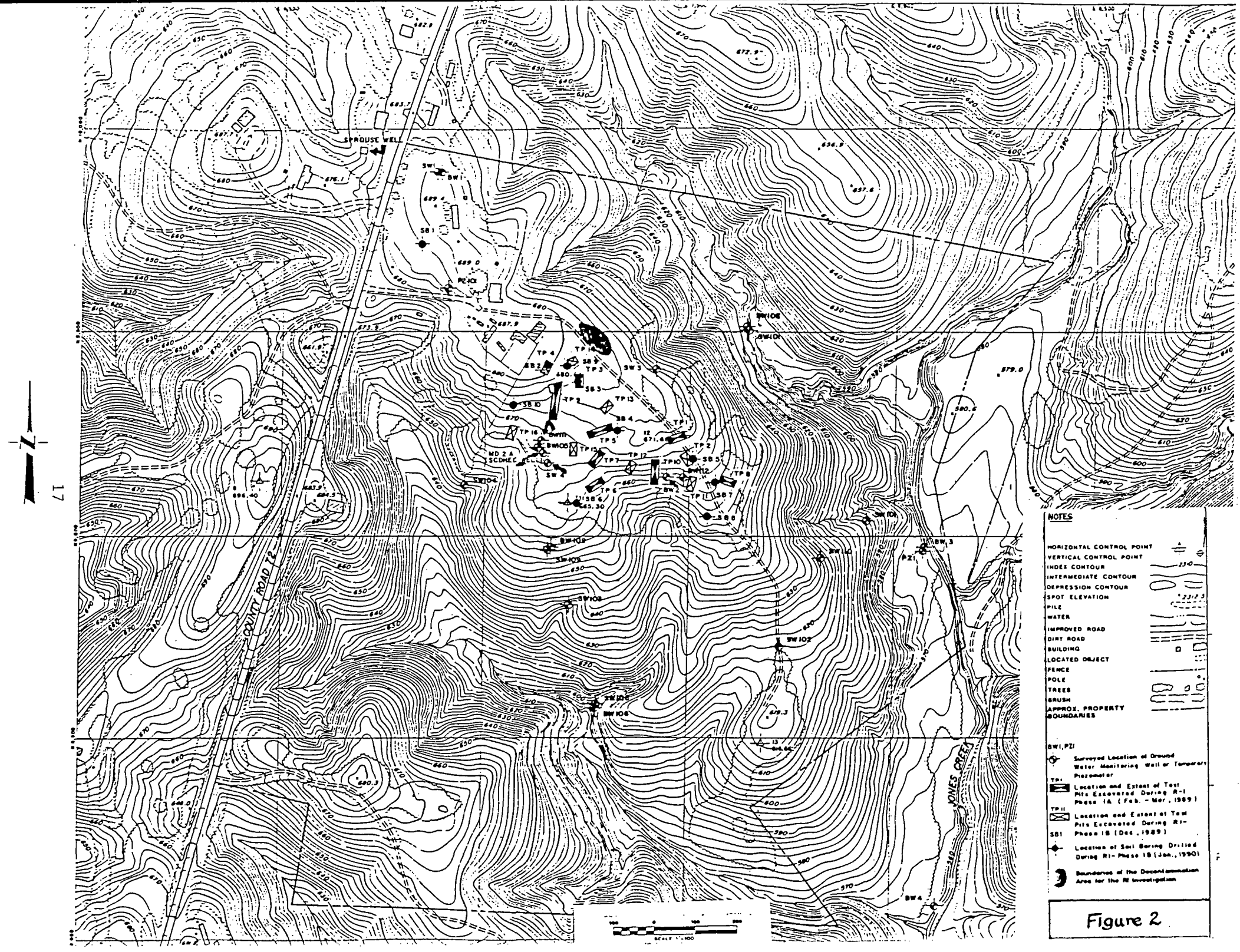
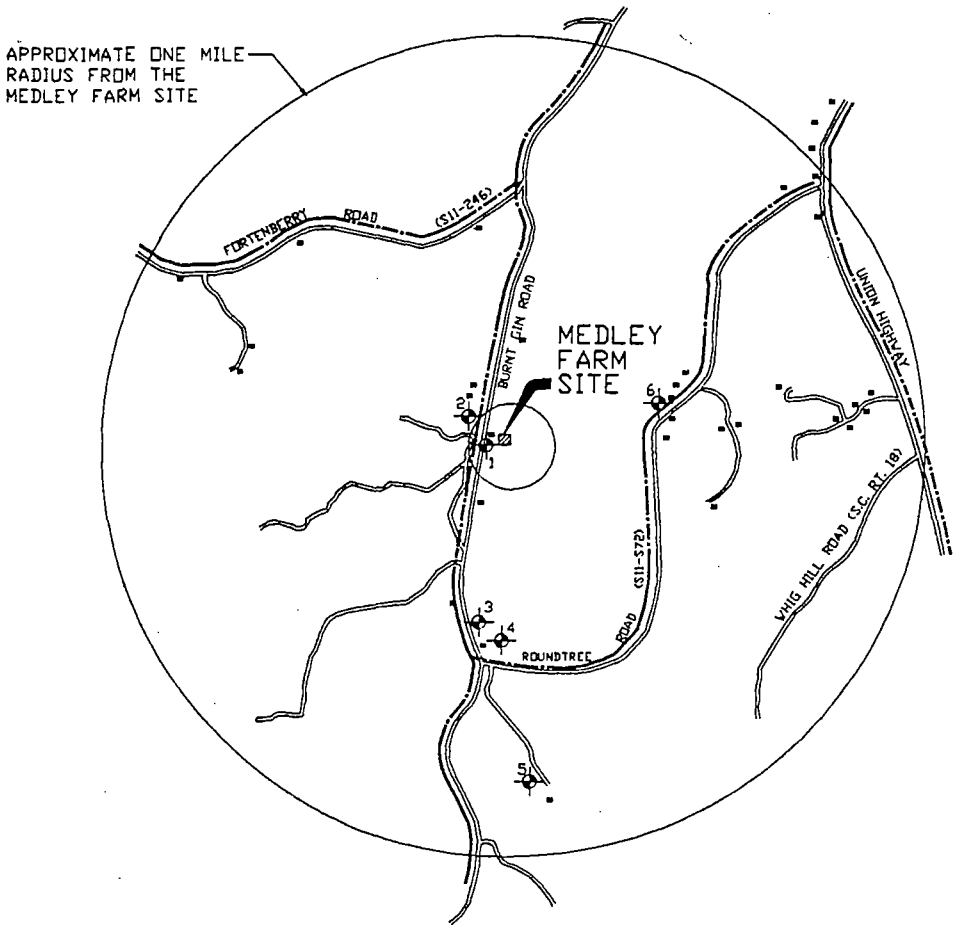
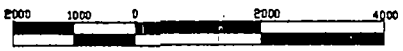

SPROUSE WELL
COUNTY ROAD 12
JONES CREEK
NOTES
HORIZONTAL CONTROL POINT
VERTICAL CONTROL POINT
INDEX CONTOUR
INTERMEDIATE CONTOUR
DEPRESSION CONTOUR
SPOT ELEVATION
PILE
WATER
IMPROVED ROAD
DIRT ROAD
BUILDING
LOCATED OBJECT
FENCE
POLE
TREES
BRUSH
APPROX. PROPERTY BOUNDARIES
BW1, PZ1
Surveyed Location of Ground Water Monitoring Well or Temporary Piezometer
TP1
Location and Extent of Test Pits Excavated During R-I Phase 1A (Feb. - Mar., 1989)
TP11
Location and Extent of Test Pits Excavated During RI-Phase 1B (Dec., 1989)
SB1
Location of Soil Boring Drilled During RI-Phase 1B (Jan., 1990)
Boundaries of the Decontamination Area for the RI Investigation

Figure 2





NORTH

LEGEND

- APPROXIMATE LOCATION OF MEDLEY FARM SITE
- APPROXIMATE LOCATION OF WATER SUPPLY WELLS ON RECORD WITH S.C. DHEC AND S.C. WRC OWNERS OF RECORD ARE IDENTIFIED AS FOLLOWS:
  1
  2
  3
  4
  5
  6
- APPROXIMATE LOCATION OF MUNICIPAL WATER SUPPLY LINES
- APPROXIMATE LOCATION OF BUILDINGS SHOWN ON USGS TOPOGRAPHIC MAP

NOTES:

1. LOCATION OF WATER SUPPLY WELLS OBTAINED FROM THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL AND THE SOUTH CAROLINA WATER RESOURCES COMMISSION BY SIRRINE, NOV. 1990. A DOOR-TO-DOOR SURVEY WAS NOT PERFORMED FOR THIS STUDY.

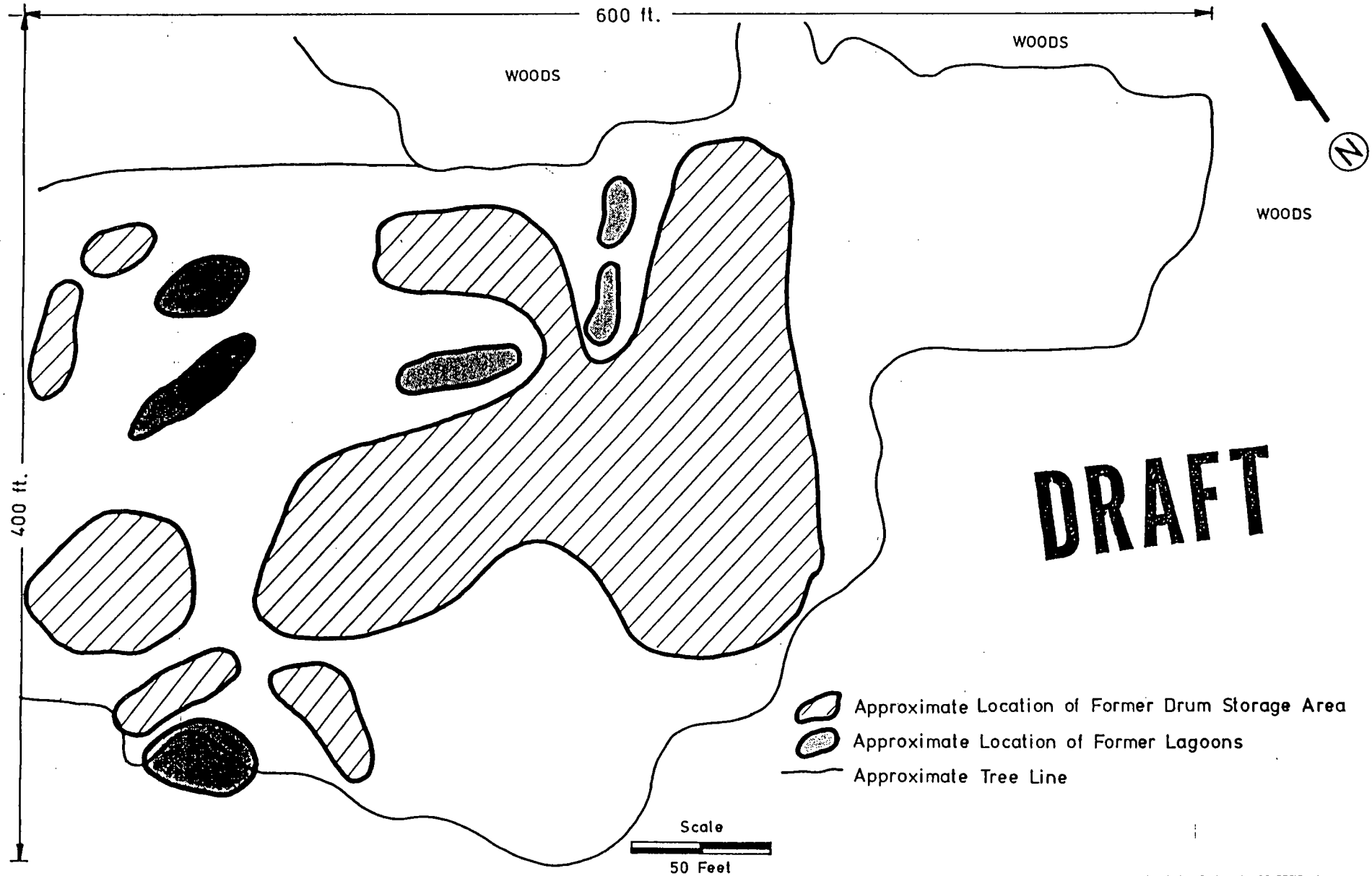
2. LOCATION OF WATER LINES SUPPLIED BY DYRATONVILLE WATER WORKS, INC., NOV. 1990.

3. LOCATIONS OF BUILDINGS TAKEN FROM USGS TOPOGRAPHIC MAP, PACOLET MILLS QUADRANGLE, 1969.

Draft

SIRRINE ENVIRONMENTAL CONSULTANTS
Greenville, South Carolina

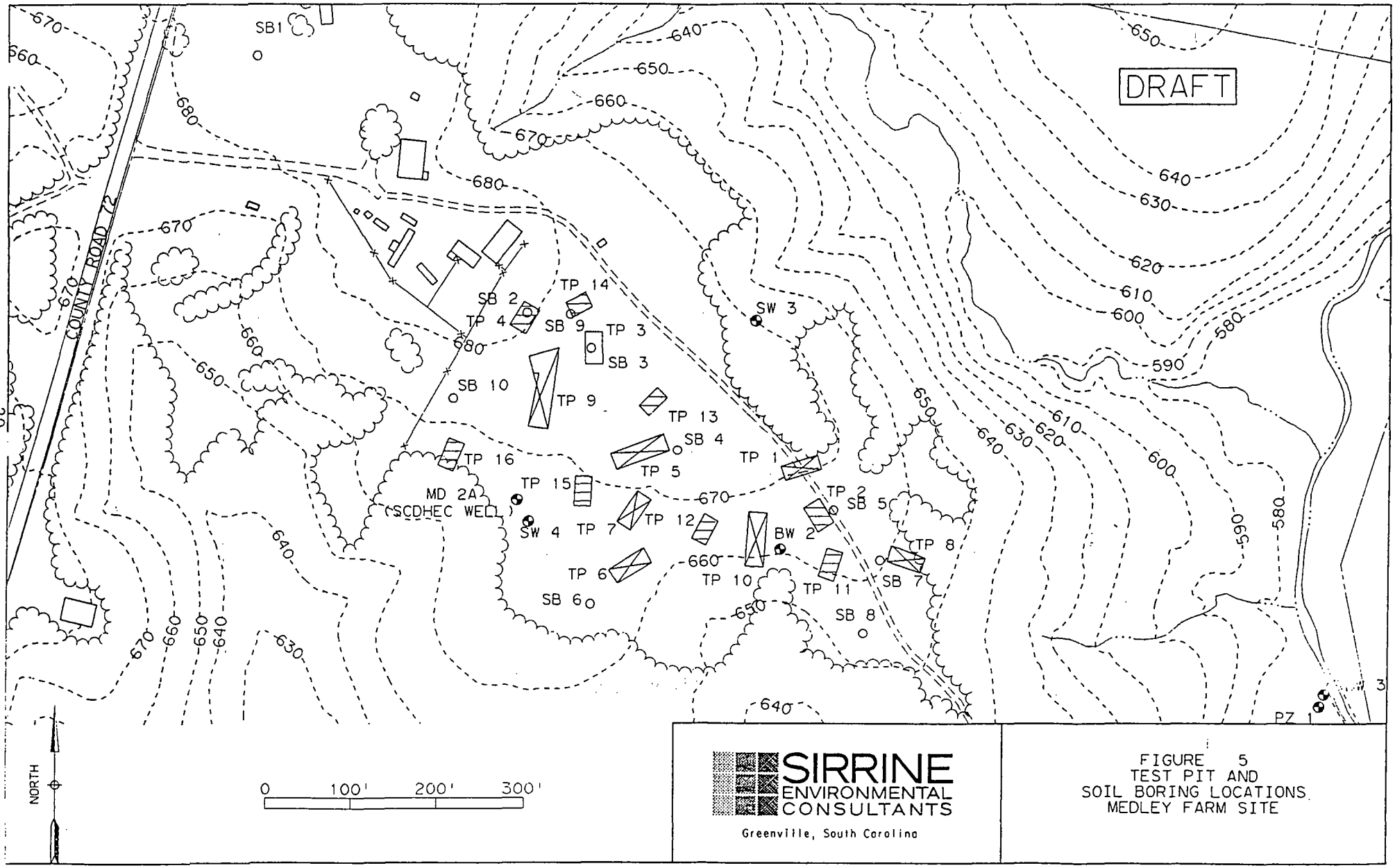
FIGURE 3
MUNICIPAL WATER SUPPLY AND DOMESTIC WELLS IN VICINITY OF MEDLEY FARM SITE



Source: NUS Report on Geophysical Study TDD No. F4-8307-03

SIRRINE ENVIRONMENTAL CONSULTANTS
Greenville, South Carolina

Figure 4
Medley Farm Site RI
Summary NUS Electromagnetic Survey Results
Gaffney, South Carolina



CAD FILE NO. ZFA1:[110,007]FIGURE41.DGN